Claims

1. Method for detecting the projected distance between a distance measuring device (110), preferably installed in a vehicle (50), and an obstacle (200), wherein the obstacle (200) has a maximum height which is smaller than the height (h_s) of the position of the distance measuring device as well as a predetermined nearest point (P) on its surface which is the shortest projected distance (d) of all points of the obstacle (200) from the distance measuring device; characterized by the following steps:

> storing a projected limit distance (d_{Gr}) between the nearest point (P) of the obstacle (200) and the distance measuring device (110) at a limit time at which the nearest point (P) of the obstacle (200) moves out of the detecting range of the distance measuring device (110) as the distance measuring device (110) and the obstacle approach each other; and detecting the projected separation (d) between the nearest point (P) of the obstacle (200) and the distance measuring device, thereby taking into consideration the limit distance (d_{Gr}) and information about the motion of the distance measuring device (110) and the obstacle (200) relative to each other, as long as the nearest point (P) of the obstacle (200) is outside of the detecting range of the distance measuring device (110).

2. Method according to claim 1, characterized in that the position and, in particular, the height (h_P) of the nearest point (P) of the obstacle (200) is detected on the basis of information provided by the distance measuring device (110) as long as the nearest point (P) of

the obstacle (200) is within the detecting range of the distance measuring device (110).

3. Method according to claim 1 or 2, characterized by detecting the distance between the nearest point (P) and the distance measuring device (110) on the basis of distance information provided by the distance measuring device as long as the nearest point (P) of the obstacle is within the detecting range of the distance measuring device (110).

4. Method according to any one of the preceding claims, characterized in that the detecting range is substantially defined by the opening angle of the distance measuring device, and the limit distance (d_{Gr}) for obstacles (200) having a height (h_P) of their nearest point above ground corresponding to the maximum total height of the obstacle, is calculated according to the following formula (1):

$$d_{Gr} = \frac{\tan(\alpha)}{h_s - h_P} \qquad (1)$$

wherein
h_s is the installation height of the distance measuring device above ground; and
α is the portion of the opening angle of the distance measuring device below the horizontal.

5. Computer program including program code for a distance detecting device, characterized in that the program code is designed to perform the method according to any one of the claims 1 through 4.

6. Distance detecting device (100), in particular, for a vehicle (50) comprising:

a distance measuring device (110) for detecting the distance between the distance measuring device and an obstacle in the vicinity of the distance measuring device, wherein the obstacle has a maximum height which is smaller than the height of the position of the distance measuring device, and a known nearest point which has the shortest projected distance of all points of the obstacle from the distance measuring device, characterized by a second storage element (130) for storing a projected limit distance between the nearest point (P) of the obstacle (200) and the distance measuring device (110) at a limit time, at which the nearest point (P) of the obstacle (200) moves out of the detecting range of the distance measuring device (110) as the distance measuring device (110) and the obstacle (200) approach each other;

a distance determination means (140) for determining the distance information about a relative motion between the distance measuring device (110) and the obstacle (200), in particular, when the nearest point (P) of the obstacle (200) is outside of the detecting range of the distance measuring device (110); and a calculating means (150) for determining the projected distance (d) between the nearest point of the obstacle and the distance measuring device (110), thereby taking into consideration the limit distance (d_{Gr}) and the distance information provided by the distance determination means (140).